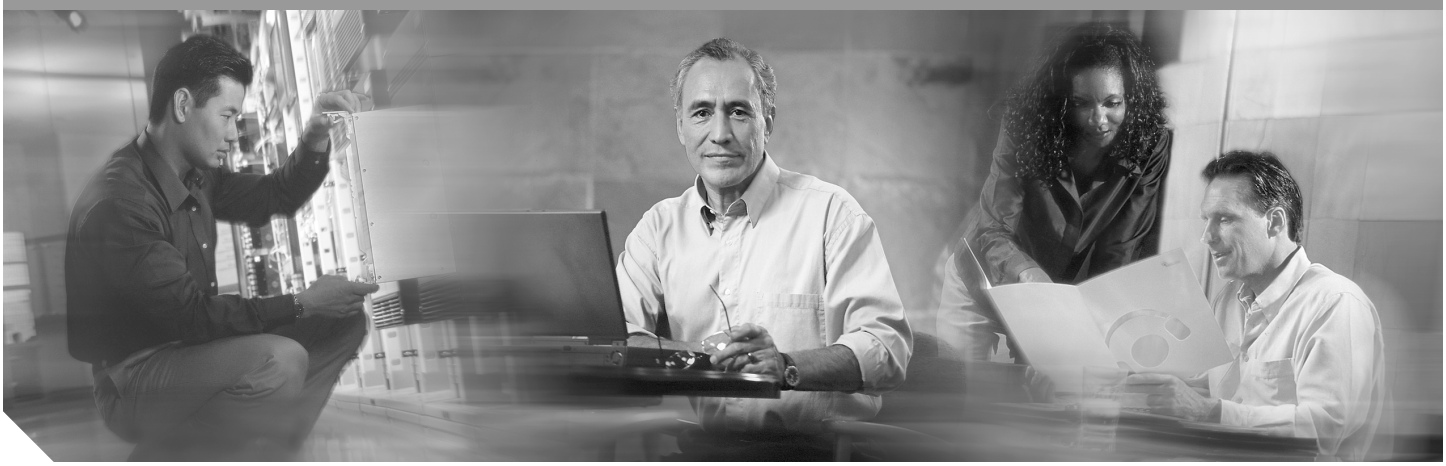
Quick Start Guide



Cisco IAD2430 Series Integrated Access Devices

INCLUDING LICENSE AND WARRANTY

1 Cisco 90-Day Limited Hardware Warranty Terms
2 Related Documentation
3 Equipment, Tools, and Accessories
4 Product Serial Number Location
5 Installing the Chassis
6 Installing a WAN or Voice Interface Card
7 Connecting Cables
8 Powering On the Cisco IAD
9 Performing the Initial Configuration
10 Obtaining Documentation
11 Documentation Feedback
12 Cisco Product Security Overview
13 Obtaining Technical Assistance
14 Obtaining Additional Publications and Information

1 Cisco 90-Day Limited Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranties and license agreements applicable to Cisco software, is available on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com.

1. Launch your browser, and go to this URL:

   http://www.cisco.com/univercd/cc/td/doc/es_inpck/cetrans.htm

   The Warranties and License Agreements page appears.
2. To read the *Cisco Information Packet*, follow these steps:
   a. Click the Information Packet Number field, and make sure that the part number 78-5235-03A0 is highlighted.
   b. Select the language in which you would like to read the document.
   c. Click Go.

      The Cisco Limited Warranty and Software License page from the Information Packet appears.
   d. Read the document online, or click the PDF icon to download and print the document in Adobe Portable Document Format (PDF).

      Note You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: http://www.adobe.com
3. To read translated and localized warranty information about your product, follow these steps:
   a. Enter this part number in the Warranty Document Number field:

      78-5236-01C0
   b. Select the language in which you would like to read the document.
   c. Click Go.

      The Cisco warranty page appears.
   d. Review the document online, or click the PDF icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

http://www.cisco.com/en/US/support.

Duration of Hardware Warranty

Ninety (90) days.

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of a Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference:

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

2 Related Documentation

User Documentation

The latest information is always online. To view or print an online document in its original format, click the PDF icon.

You can also order printed copies of many documents. See the "Obtaining Documentation" section on page 23.

To find online user documentation (PDF and HTML formats):

From Cisco.com at http://www.cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series Integrated Access Devices

From the Cisco legacy website (Cisco Connection Online) at the following URL:

http://www.cisco.com/univercd/home/home.htm

Tip To navigate to the next higher level in the documentation hierarchy, click CONTENTS in the navigation bar at the top of each page.

Cisco IAD2430 Series Documentation

This Document

You can find this quick start guide at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/iad/iad2430/2430qsg/index.htm

or on Cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series Integrated Access Devices > Technical Documentation > Quick Start > Cisco IAD2430 Series Integrated Access Devices Quick Start Guide

Regulatory Compliance and Safety Information

The regulatory compliance and safety information document provides essential safety information applicable to your Cisco IAD. This document contains multiple-language translations of the safety warnings applicable to both Cisco IAD2420 series and Cisco IAD2430 series devices.

You can find this document at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/iad/2400rcsi/2400rcsi.htm

or on Cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series Integrated Access Devices > Cisco IAD2400 Series Regulatory Compliance and Safety Information

Hardware Installation Guide

The hardware installation guide provides additional detailed description, installation, and cabling information.

You can find this document at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/iad/iad2430/hw_inst/index.htm

or on Cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series IADs > Technical Documentation > Cisco IAD2430 Series Integrated Access Devices > Installation Guides Books > Cisco IAD2430 Series Hardware Installation Guide

Software Configuration Guide

The software configuration guide provides additional detailed configuration information specific to Cisco IAD2430 series IADs.

You can find this document at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/iad/iad2430/sw_conf/index.htm

or on Cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series IADs > Technical Documentation > Cisco IAD2430 Series Integrated Access Devices > Configuration Guides Books > Cisco IAD2430 Series Software Configuration Guide

Release Notes

Cisco IOS release notes for Cisco IAD2430 series IADs provide up-to-date information about Cisco IOS software releases used on Cisco IAD2430 series IADs.

You can find these documents at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/iad/iad2430/index.htm

Cisco IOS Software Documentation

Master Index to Software Documentation

The master index provides links to topics and commands for each Cisco IOS software release. This includes configuration guides, command references, release notes, new feature documentation, and system messages.

You can find master indexes at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/software/index.htm

or on Cisco.com at the following location:

Products and Services > Voice Gateways > Cisco IAD2400 Series IADs > Technical Documentation > Cisco IAD2430 Series Integrated Access Devices > Software Center

That resource is also available at the following URL:

http://www.cisco.com/public/sw-center/

If you have an account on Cisco.com, you can get updated information about platform support for features from Cisco Feature Navigator at the following URL:

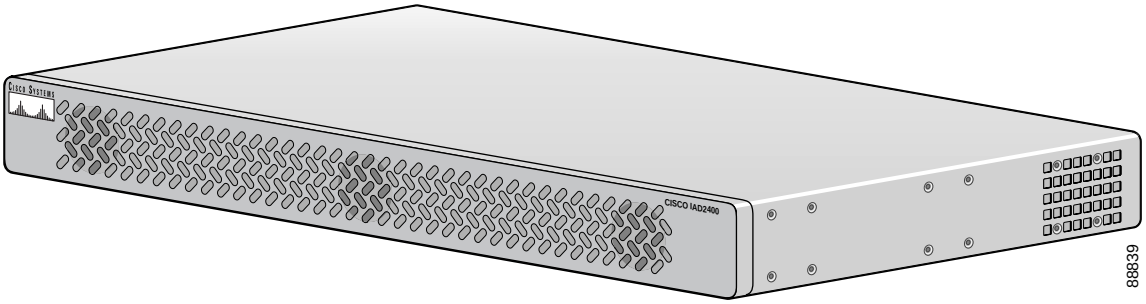
http://www.cisco.com/go.fn

3 Equipment, Tools, and Accessories

Products in the Cisco IAD2430 Series

The Cisco IAD2430 series consists of five models with a common front panel (Figure 1). All models include a slot for the external compact flash card, as well as console, auxiliary, and compact flash (CF) ports. The front panel, labeled "Cisco IAD2400 Series," is identical for all models. However, the back panels, labeled by specific model number, vary considerably, depending on interfaces, ports, and options. Analog voice ports use an RJ-21 interface.

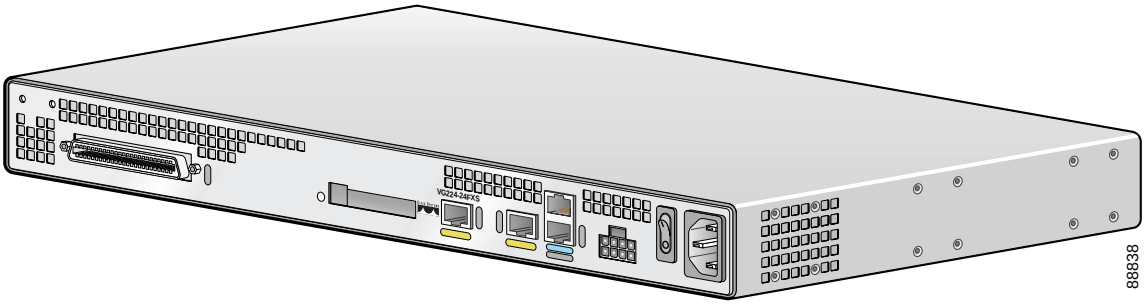
Figure 1 Cisco IAD2430 Series Front Panel



Note The Cisco IAD2432-24FXS is used to illustrate the examples in this guide.

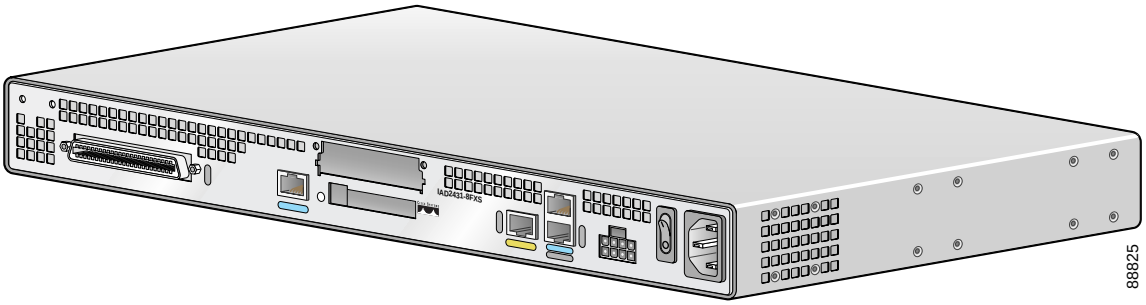
Figure 2 identifies the different back panels and features of the models.

Figure 2 Identifying Models in Cisco IAD2430 Series



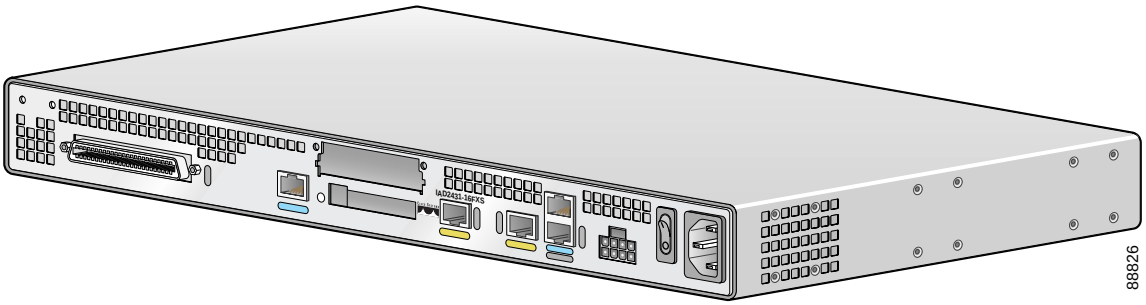
Cisco IAD2430-24FXS

- RJ-21 analog voice interface
- T1/E1 ports: none
- FE ports: 2
- External compact flash



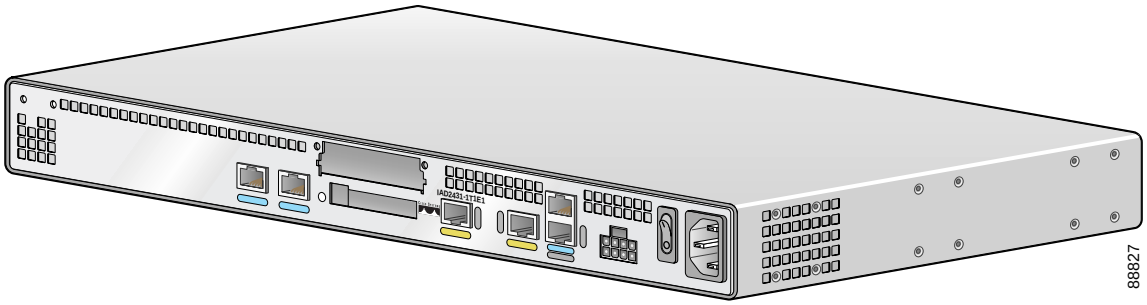
Cisco IAD2431-8FXS

- RJ-21 analog voice interface
- T1/E1 ports: 1
- FE ports: 1
- WIC/VIC option
- External compact flash



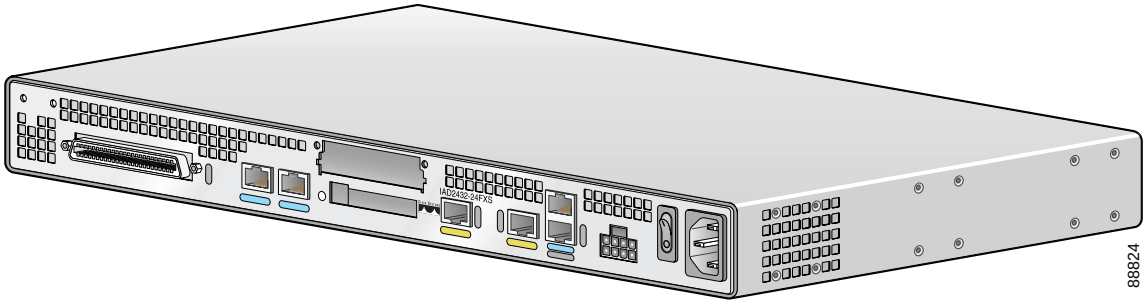
Cisco IAD2431-16FXS

- RJ-21 analog voice interface
- T1/E1 ports: 1
- FE ports: 2
- WIC/VIC option
- External compact flash



Cisco IAD2431-1T1E1

- T1/E1 ports: 2
- FE ports: 2
- WIC/VIC option
- External compact flash



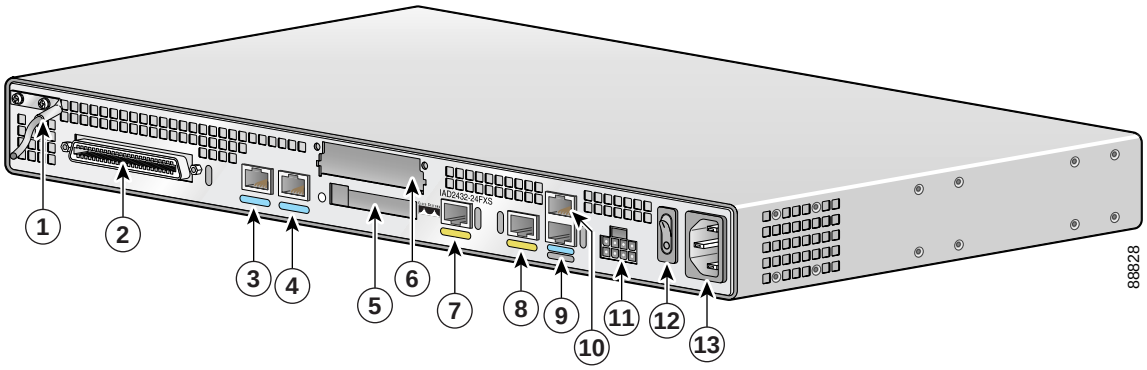
Cisco IAD2432-24FXS

- RJ-21 analog voice port
- T1/E1 ports: 2
- FE ports: 2
- WIC/VIC option
- External compact flash

The Cisco IAD2432-24FXS is used to illustrate back-panel function options. See Figure 3 on page 6.

Note Not all models have all functions.

Figure 3 Back-Panel Functions Options (Cisco IAD2432-24FXS shown)



1	Chassis ground connection	**6**	WIC/VIC slot	**11**	DC power input
2	RJ-21 connector	**7**	Fast Ethernet port 1	**12**	On/off switch
3	T1/E1 port 1	**8**	Fast Ethernet port 0	**13**	AC power input
4	T1/E1 port 0	**9**	AUX port		
5	Compact flash port	**10**	Console port		

Note The console port is above the AUX port.

Items Included with Cisco IAD2430 Series IADs

The following are included with each model in the series:

- Rack-mount brackets for 19-inch rack; grounding lug and fasteners; power cord
- Chassis guard for wall-mounting applications
- Connected RJ-45-to-DB9 cable (labeled *Console*)
- Connected RJ-45-to-DB-25 cable (labeled *Auxiliary*)
- *Cisco IAD2400 Series Regulatory Compliance and Safety Information*
- *Quick Start Guide—Cisco IAD2400 Series Integrated Access Devices* (this document)

Note Power cords vary, depending upon local requirements.

Items Not Included

You may need one or more items on this list for your application:

- Four telco machine screws, for installing the chassis in a rack (Use the screw size required by the rack.)
- Eight wood screws or other fasteners, for installing the chassis on a wall. An additional starter screw may be used to facilitate wall mounting.
- PC running terminal emulation software for administrative access
- Modem for remote access
- Fast Ethernet RJ-45-to-RJ-45 straight-through cable
- T1 or E1 interface RJ-48 T1 cable
- Analog voice RJ-21 cable
- Digital voice RJ-48 T1 cable
- Serial, RJ-48, or RJ-45 cables for connecting WAN interface cards or voice interface cards
- Tools: number 2 Phillips screwdriver; medium blade screwdriver; ESD-preventive wrist strap

4 Product Serial Number Location

The serial number label for the Cisco IAD2430 series is located on the bottom of the chassis, near the compliance label. The size of the serial number label is 0.25 x 1 inch. It has the letters “SN:” followed by eleven characters.

5 Installing the Chassis

Safety Information

Caution For safety information you need to know before working on your Cisco IAD2430 series IAD, see the *Cisco IAD2400 Series Regulatory Compliance and Safety Information* document that accompanied this product. That document provides translations for each of the warnings.

IMPORTANT SAFETY INSTRUCTIONS

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.**

Note: SAVE THESE INSTRUCTIONS

Note: This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Statement 1071

Warning **Only trained and qualified personnel should be allowed to install or replace this equipment.** Statement 1030

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Warning **This equipment must be installed and maintained by service personnel as defined by AS/NZS 3260. Incorrectly connecting this equipment to a general-purpose outlet could be hazardous. The telecommunications lines must be disconnected 1) before unplugging the main power connector or 2) while the housing is open, or both.** Statement 1043

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.** Statement 1040

Warning **Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.** Statement 1029

Chassis Installation Options

You can set the chassis on a desktop, install it in a rack, or mount it on a wall.

Tip Before proceeding, consider the location of the equipment with respect to a good ground. See the "Grounding the Chassis" section on page 13.

See the following instructions:

- Using the Correct Bracket Screws, page 9
- Using Quick Installation Brackets, page 9
- Rack-Mounting the Chassis, page 10
- Wall-Mounting the Chassis, page 11
- Grounding the Chassis, page 13

Caution Use only the mounting hardware supplied with this product.

Using the Correct Bracket Screws

Two sets of bracket attachment screws are provided, in separate packages. Take care to use each screw type, and washers as needed, in the appropriate locations. Table 1 summarizes the bracket attachment screw types.

Table 1 Bracket Attachment Screws for Rack-Mounting and Wall-Mounting

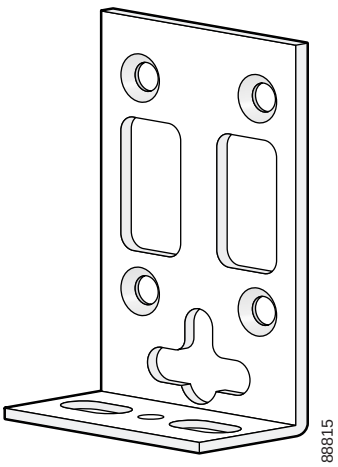
Rack-mounting	Wall-mounting
• Eight Phillips head screws (four per bracket)	• Four 6-32 slotted hex screws (two per bracket) and four plastic washers
• Washers are not required	• Washers are required

Using Quick Installation Brackets

A new bracket accompanies this product. See Figure 4. This bracket, with a keyhole feature, facilitates wall-mounting by allowing the installer to rest the bracket on a starter screw, freeing the installer's hands.

- To rack-mount the unit, you have three positioning options. See the "Rack-Mounting the Chassis" section on page 10.
- To wall-mount the unit, attach the short leg of the bracket to the chassis at the pair of holes in the center of the chassis side. See the "Wall-Mounting the Chassis" section on page 11.

Figure 4 Quick Installation Bracket



Rack-Mounting the Chassis

The following warning applies only when the unit is rack-mounted:

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To rack-mount the chassis, follow this procedure:

Step 1 Choose one of the methods shown in Figure 5, Figure 6, or Figure 7, and attach the long leg of the mounting brackets to the chassis, as shown.

Caution Make sure to use the correct screws for this mounting option (see Table 1 on page 9).

Note Screws are included for attaching the brackets to the chassis, but not for installing the chassis in a rack or on a wall. You need four additional machine screws to install the chassis in a rack. Use the screw size required by your rack.

Figure 5 19-Inch Rack-Mounting with Front Panel Forward

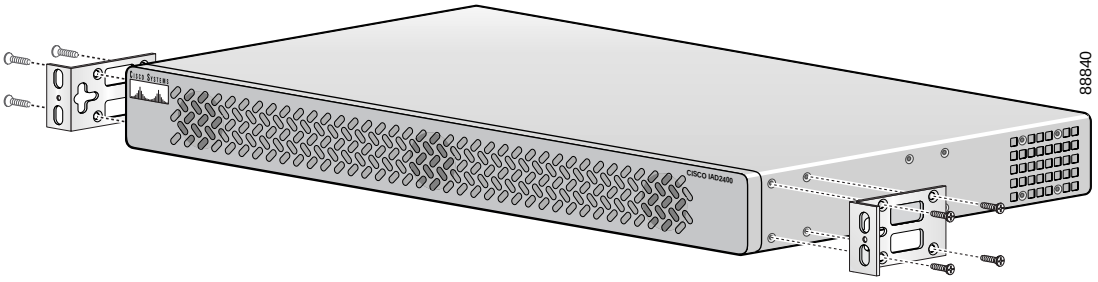


Figure 6 19-Inch Rack-Mounting with Rear Panel Forward

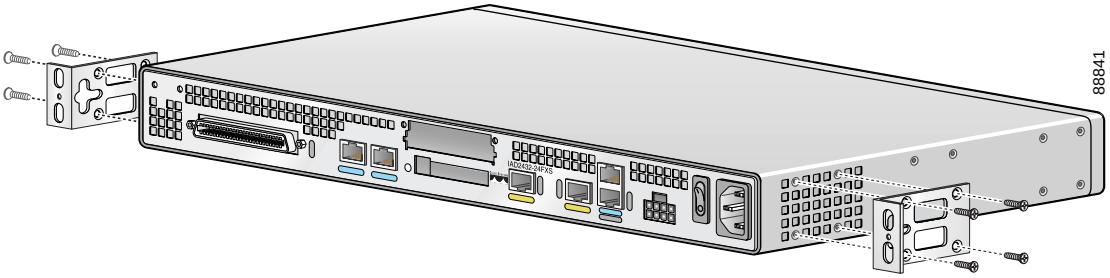
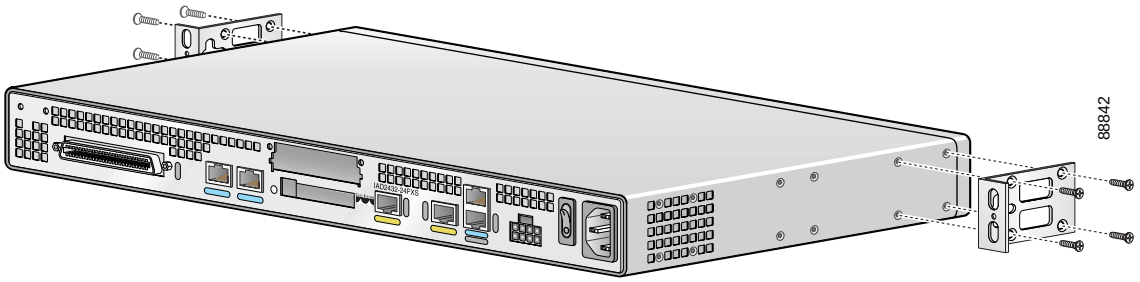


Figure 7 Telco 19-Inch Rack-Mounting with Rear Panel Forward



Step 2 Install the chassis in the rack.

Wall-Mounting the Chassis

The following warning applies only when the unit is wall-mounted:

Warning **This unit is intended to be mounted on a wall. Please read the wall mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 248

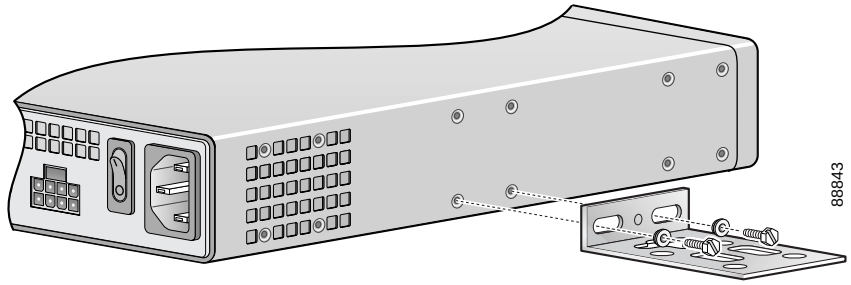
Caution You can wall-mount the unit with either the right or left side facing up; however, the front and rear panels must be vertical.

To wall-mount the chassis, follow this procedure:

Step 1 Attach the short leg of one bracket to the chassis, as shown in Figure 8, using two 6-32 x 1/4 slotted hex screws (provided). Be sure to use a plastic washer (provided) with each screw; the narrow end of the washer must fit into the bracket slot, facing the chassis.

Caution Be sure to use the correct screws and plastic washers for this mounting option. (See Table 1 on page 9.)

Figure 8 Attaching the Brackets for Wall-Mounting



Step 2 Attach the second bracket to the opposite side of the chassis.

Step 3 Attach the router to the wall using the brackets previously attached and attachment hardware that you provide as follows:

- You can install a starter screw in the wall, and hook the bracket keyhole over the screw. This holds the unit in place for easy installation of the attachment screws.

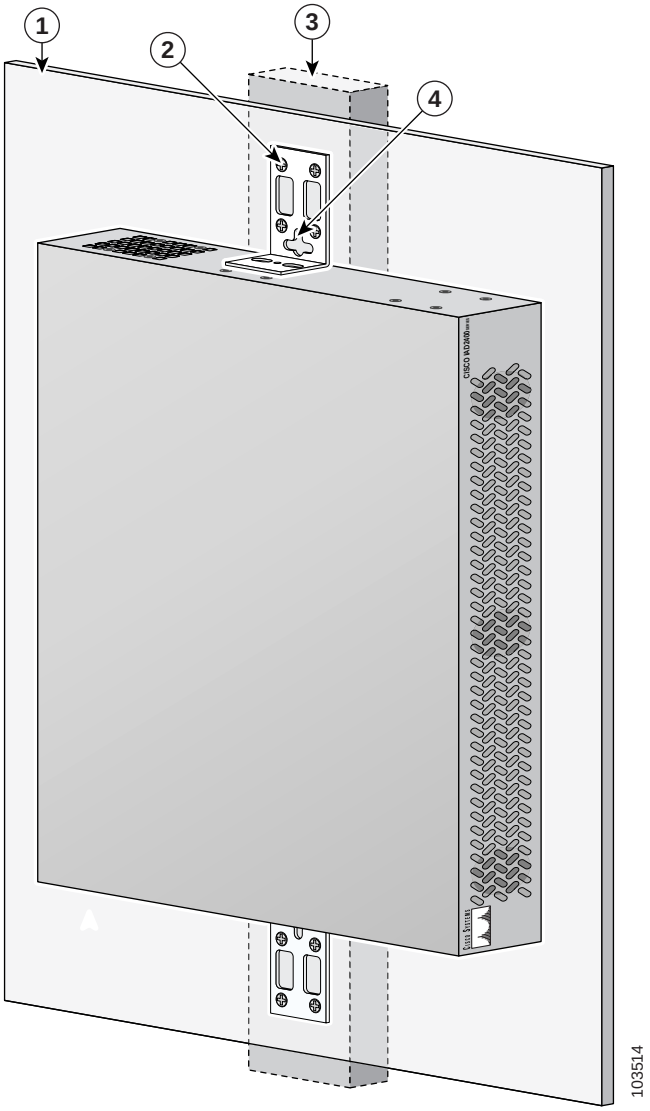
- Attach both brackets to the wall.

Note For attaching to a wall stud, each bracket requires two #10 wood screws (round- or pan-head) with #10 washers, or two #10 washer-head screws. The screws must be long enough to penetrate at least 3/4 inch (20 mm) into supporting wood or metal wall stud.

Note For hollow-wall mounting, each bracket requires two wall anchors with washers. Wall anchors and washers must be size #10.

- Figure 9 shows the orientation required for installation.

Figure 9 Attaching the Chassis to a Wall



1	Wall	**3**	Wall stud
2	Bracket	**4**	Keyhole (for starter screw)

Grounding the Chassis

Warning **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

Warning **Use copper conductors only.** Statement 1025

Warning **AC connected units must have a permanent ground connection in addition to the power cable ground wire. NEBS-compliant grounding satisfies this requirement.** Statement 284

You must connect the chassis to a reliable earth ground; the ground wire must be installed in accordance with local electrical safety standards.

- For NEBS-compliant grounding, use size AWG 6 (13 mm^2) wire and the ground lug provided in the accessory kit.
- For NEC-compliant grounding, use size AWG 14 (2 mm^2) or larger wire and an appropriate user-supplied ring terminal.
- For EN/IEC 60950-compliant grounding, use size AWG 18 (1 mm^2) or larger wire and an appropriate user-supplied ring terminal.

To connect the chassis to a reliable earth ground, perform the following steps:

Step 1 Locate a suitable ground.

Tip Using a multimeter, measure the resistance between various possible ground locations, such as between the ground of a junction box (outlet) and the ground of a power tap, between the ground of a junction box and a metal water pipe, between the Cisco IAD chassis and the ground of a power tap, and between the Cisco IAD chassis and the ground of a junction box. A good ground connection should read between 0.0 and 0.5 ohms.

Step 2 Strip one end of the ground wire to the length required for the ground lug or terminal.

- For the NEBS ground lug—approximately 0.75 in. (20 mm)
- For user-provided ring terminal—as required

Step 3 Crimp the ground wire to the ground lug or ring terminal, using a crimp tool of the appropriate size.

Step 4 Attach the ground lug or ring terminal to the chassis as shown in Figure 10 or Figure 11. For the ground lug, use the two screws with captive locking washers provided. For a ring terminal, use one of the screws provided. Use a number 2 Phillips screwdriver, and tighten the screws to a torque of 8 to 10 in-lb (0.9 to 1.1 N-m).

Step 5 Connect the other end of the ground wire to a grounding point at your site.

Figure 10 NEBS-Compliant Chassis Ground Connection Using Ground Lug

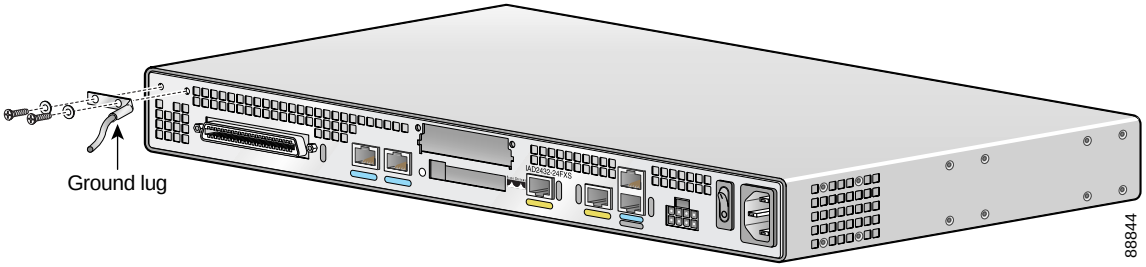
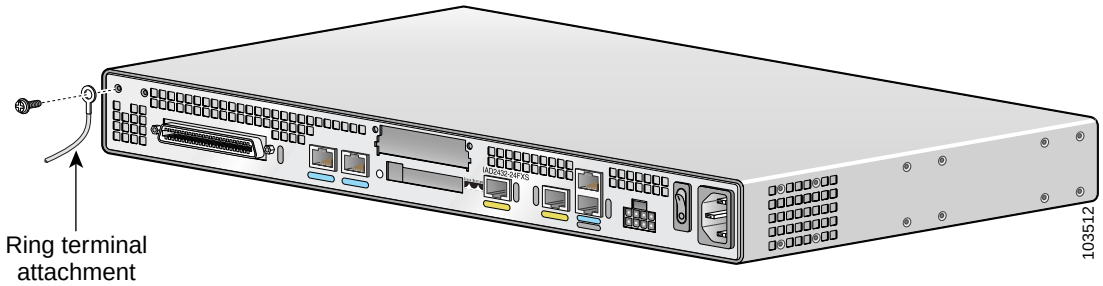


Figure 11 Chassis Ground Connection Using Ring Terminal



6 Installing a WAN or Voice Interface Card

The Cisco IAD2430 series IAD includes a slot for a WAN interface card (WIC) or voice interface card (VIC). The following WICs and VICs (also used by Cisco 2600 series and Cisco 3600 series routers) are supported in releases of the Cisco IAD2430 series:

- WIC-1T
- WIC-2T
- WIC-1DSU-T1
- VIC2-2FXS
- VIC2-4FXS
- VIC2-2FXO
- VIC2-4FXO
- VIC2-2BRI-NT/TE
- WIC-1ADSL
- WIC-1SHDSL-V2
- WIC-1ADSL-DG
- VWIC-2MFT-T1
- VWIC-2MFT-E1

Note Contact your Cisco account representative for the most recent supported cards.

For detailed information on installing and connecting interface cards, refer to the following:

"Installing WAN and Voice Interface Cards in Cisco Modular Routers," in the *Cisco Interface Cards Installation Guide*, at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/cis2600/hw_inst/wic_inst/wic_doc/index.htm

Caution WAN and voice interface cards do not support online insertion and removal (hot swapping). Before inserting a card into the Cisco IAD chassis, you must turn off electrical power and disconnect network cables.

Always use an ESD-preventive wrist strap before handling cards.

To install a WIC or VIC, follow this procedure:

Step 1 Use a number 2 Phillips screwdriver to remove the screws holding the metal plate over the card slot cover. Remove the plate.

Step 2 Holding the interface card by the edges, line up the card with the guides on both sides of the slot.

Step 3 Insert the card in the slot. Push until it is firmly seated in the connector and the front panel of the card is flush with the rear panel of the Cisco IAD.

Step 4 Use the screwdriver to tighten the captive screws on the card.

7 Connecting Cables

Warning **Do not work on the system, or connect or disconnect cables during periods of lightning activity.** Statement 1001

Warning **Read the installation instructions before connecting the system to the power source.** Statement 1004

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:**
120 VAC, 15A (240 VAC, 10A international) Statement 1005

Warning **To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.** Statement 1021

Warning **Hazardous network voltages are present in WAN ports regardless of whether power to the unit is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the unit first.** Statement 1026

Warning **This equipment has been designed for connection to TN and IT power systems.** Statement 1007

Warning **Before performing any of the following procedures, ensure that power is removed from the DC circuit.** Statement 1003

Warning **To prevent accidental discharge in the event of a power line cross, route on-premise wiring away from power cables and off-premise wiring, or use a grounded shield to separate the on-premise wiring from the power cables and off-premise wiring. A power line cross is an event, such as a lightning strike, that causes a power surge. Off-premise wiring is designed to withstand power line crosses. On-premise wiring is protected from power line crosses by a device that provides overcurrent and overvoltage protection. Nevertheless, if the on-premise wiring is in close proximity to, or not shielded from, the off-premise wiring or power cables during a lightning strike or power surge, the on-premise wiring can carry a dangerous discharge to the attached interface, equipment, and nearby personnel.** Statement 338

Connecting LAN and Power Cables

Caution The Cisco IAD2430 series chassis provides inputs for both AC and DC power. Design your installation to use only one type of power. *Do not use AC and DC power at the same time.* If you do, the unit stops operating, and you must reboot it with only a single power source.

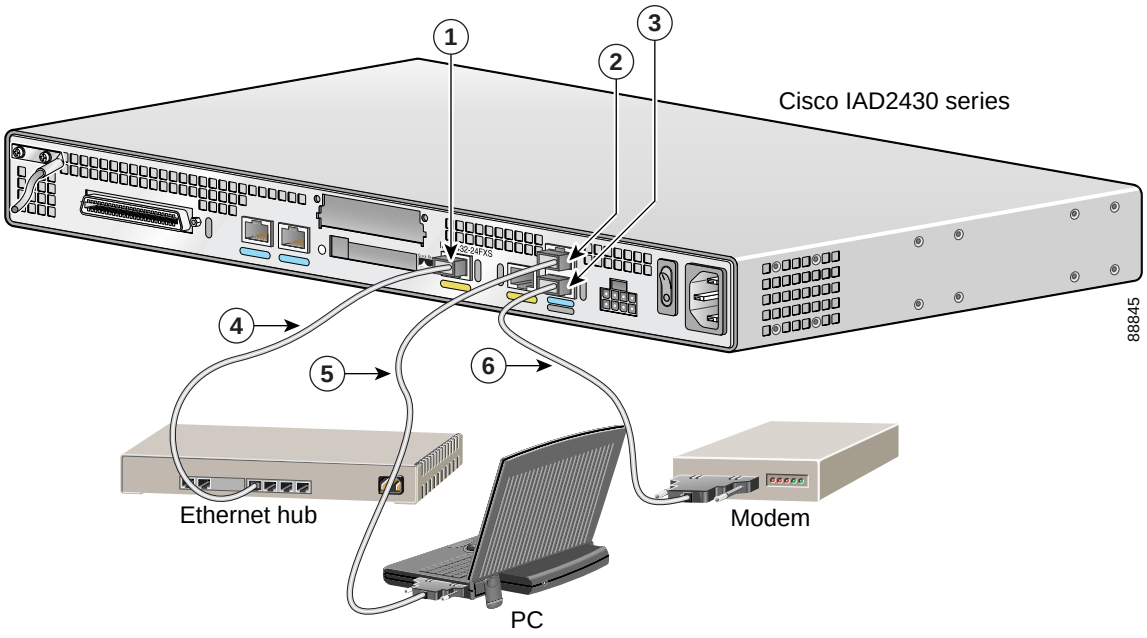
These cables and connections are described in Table 2 and Figure 12.

Table 2 LAN, Administrative Access, and Power Cable Selection

Port or Connection	Color or Type	Connected To	Cable
Fast Ethernet	Yellow	Fast Ethernet hub	Straight-through Fast Ethernet cable (not included)
Console	Light blue	PC or ASCII terminal communication (COM) port	RJ-45-to-DB9 console cable (included)
Auxiliary	Black	Modem for remote access	RJ-45-to-DB25 auxiliary cable (included)
Power	Power	100–240 VAC, 50–60 Hz	Grounding power cord (included)[1]

1. Power cables vary to meet local requirements.

Figure 12 LAN, Administrative Access, and Power Connections



1	Fast Ethernet port	**4**	Fast Ethernet (straight-through)
2	Console port	**5**	RJ-45-to-DB9 console cable
3	AUX port	**6**	RJ-45-to-DB25 auxiliary cable

Connecting WAN and Voice Cables

Warning **For connections outside the building where the equipment is installed, the following ports must be connected through an approved network termination unit with integral circuit protection.**
FXS/T3/E3 Statement 1044

The following warning applies to the RJ-21 interface on units that have one.

Warning **This equipment contains a ring signal generator (ringer), which is a source of hazardous voltage. Do not touch the RJ-11 (phone) port wires (conductors), the conductors of a cable connected to the RJ-11 port, or the associated circuit-board when the ringer is active. The ringer is activated by an incoming call.** Statement 1042

These cables and connections are described in Table 3 and Figure 13.

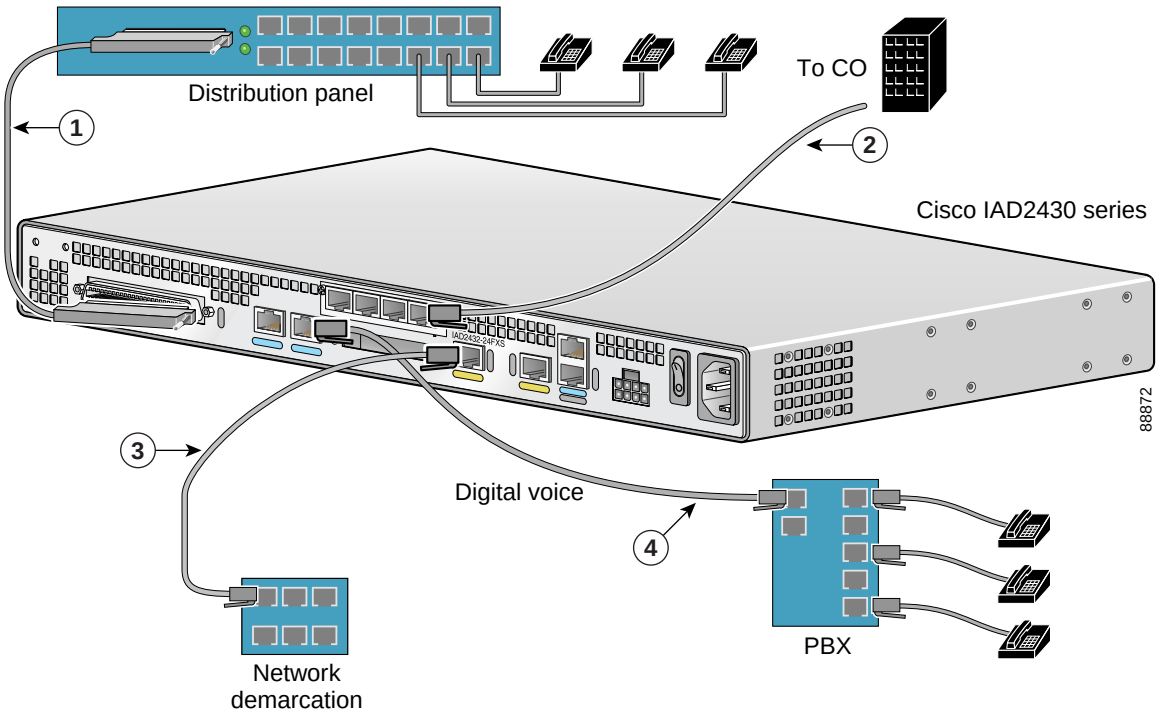
Table 3 WAN and Voice Cable Selection

Port or Interface		Color or Type	Connected To	Cable (not included)
T1/E1	WAN	Light green	WAN	RJ-48 T1 cable
T1/E1	Digital voice	RJ-48C	Digital PBX	RJ-48 T1 cable
WIC-2T	Serial	60-pin D-sub	CSU/DSU and serial network or equipment	Serial transition cable matching signaling protocol (EIA/TIA-232, EIA/TIA-449, V.35, X.21, or EIA-530) and operating mode (DTE or DCE)
WIC-1DSU-T1	WAN	Light green	WAN	RJ-48 T1 cable

Table 3 WAN and Voice Cable Selection (continued)

Port or Interface		Color or Type	Connected To	Cable (not included)
VIC2-4FXO	FXO	RJ-11	Station side of analog PBX	RJ-11 cable
Analog voice	FXS	RJ-21	Distribution panel	RJ-21-to-RJ-21 straight-through cable

Figure 13 WAN and Voice Connections



1	RJ-21 cable	**3**	RJ-48 straight-through cable
2	RJ-45 cable (through a patch panel) to central office	**4**	RJ-48 rollover cable

8 Powering On the Cisco IAD

Caution *Do not use AC and DC power at the same time.* If you do, the unit stops operating, and you must reboot it with only a single power source.

Checklist for Power-On

You are ready to power on the Cisco IAD if it meets these requirements:

- The chassis is securely mounted.
- Power and interface cables are connected.

Power-On Procedure

Perform this procedure to power on your Cisco IAD and verify that it goes through its initialization and self-test. When this is finished, the Cisco IAD is ready to configure.

To power on the Cisco IAD, follow this procedure:

Step 1 Power on your terminal or PC, and configure it for 9600 bps, 8 data bits, 1 stop bit, and no parity.

Step 2 Move the Cisco IAD power switch to the ON position.

The green LED next to the auxiliary port should come on and the fan should operate. If this does not happen, see the power-on procedure in the *Cisco IAD2430 Series Integrated Access Device Hardware Installation Guide*.

The following message appears at the end of the boot-up messages:

```
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]:
```

Step 3 Enter no to proceed with manual configuration using the command-line interface (CLI):

```
Would you like to enter the initial configuration dialog? [yes/no]: no
Would you like to terminate autoinstall? [yes]
```

Step 4 Press Return to terminate autoinstall and continue with manual configuration.

Several messages appear, ending with a line similar to the following:

```
...
Copyright (c) 1986-2003 by cisco Systems, Inc.
Compiled <date> <time> by <person>
```

Step 5 Press Return to bring up the `Router>` prompt:

```
...
flashfs[4]: Initialization complete.
Router>
```

Step 6 Enter privileged EXEC mode:

```
Router> enable
Router#
```

Step 7 Continue with the next section, “Performing the Initial Configuration.”

9 Performing the Initial Configuration

This section shows how to prepare the Cisco IAD to perform basic communication functions through its 10/100BASE-T Fast Ethernet and WAN interfaces.

Note The console port is *above* the AUX port.

Perform the following initial configuration procedures, as applicable:

- Getting Your Network Information, page 19
- Setting the Fast Ethernet Port IP Address, page 20
- Configuring a T1/E1 Port for a WAN Connection, page 20
- Configuring Digital Voice, page 21
- Verifying and Saving Your Configuration, page 22

Getting Your Network Information

Gather the following information, as applicable, before you begin the configuration process:

- For Fast Ethernet ports: IP address
- For T1/E1 ports: clock source, framing, line code, cable length (T1 only)

Setting the Fast Ethernet Port IP Address

To set an IP address for the Fast Ethernet port, follow the procedure below. After setting this address, you can configure the Cisco IAD remotely through a Telnet connection.

	Command	Description
Step 1	`Router# configure terminal`	Enters global configuration mode.
Step 2	`Router(config)# enable password password`	Sets a password for the privileged EXEC mode.
Step 3	`Router(config)# interface Fast Ethernet 0/0`	Enters interface configuration mode.
Step 4	`Router(config-if)# ip address IP-address subnet-mask`	Enters the IP address and subnet mask for the Fast Ethernet port.
Step 5	`Router(config-if)# no shutdown`	Activates the Fast Ethernet port.
Step 6	`Router(config-if)# exit`	Returns to global configuration mode.
Step 7	`Router(config)# line vty 0 4`	Enters line configuration mode.
Step 8	`Router(config-line)# password password`	Sets a password for remote access to the Cisco IAD.
Step 9	`Router(config-line)# end`	Returns to privileged EXEC mode.
Step 10	`Router# copy system:running-config nvram:startup-config`	Saves the configuration.

Configuring a T1/E1 Port for a WAN Connection

The T1/E1 port supports balanced T1/E1 according to ANSI T1.403 and has a built-in channel service unit/data service unit (CSU/DSU).

To configure basic T1/E1 controller settings to support Point-to-Point Protocol (PPP), High-Level Data Link Control (HDLC), or Frame Relay (FR), follow these steps, beginning in global configuration mode:

	Command	Description
Step 1	`Router(config)# controller t1/e1 1/0`	Enters controller configuration mode by controller number.
Step 2	`Router(config-ctrl)# clock source {internal | line | loop-timed}`	Configures the controller clock source for a DS1 link. If the clock source is a network device attached to the T1/E1 port that you are configuring now, select the line option. For any other clock source (internal or a network device attached to any other port), select the internal option.
Step 3	`Router(config-ctrl)# description line`	Enters a description of the controller, such as the destination or its application. The description can be as many as 80 characters long.

Step 4	`Router(config-ctrl)# cablelength short {133 | 266 | 399 | 533 | 655}`
	or
	`Router(config-ctrl)# cablelength long {gain26 | gain36} {-15db | -22.5db | -7.5db | 0db}`
		Configures the cable length if the length is 655 ft (200 m) or shorter.
		or
		Configures the receive gain and transmit attenuation if the cable length is longer than 655 ft (200 m).

Step 5	`Router(config-ctrl)# framing {sf | esf}`	If necessary, changes the DS1 link framing format. The default is SuperFrame (sf).
Step 6	`Router(config-ctrl)# linecode {ami | b8zs}`	If necessary, changes the line encoding format for the DS1 link. The default is ami.
Step 7	`Router(config-ctrl)# no shutdown`	Activates the T1/E1 controller.
Step 8	`Router(config-ctrl)# exit`	Exits controller configuration mode.

	Command	Description
Step 9	`Router(config)# exit`	Exits configuration mode.
Step 10	`Router# show controller t1/e1 1/0`	Verifies the controller configuration.

Configuring Digital Voice

To configure basic T1/E1 controller settings to support Point-to-Point Protocol (PPP), High-Level Data Link Control (HDLC), or Frame Relay (FR), follow these steps, beginning in global configuration mode:

	Command	Description
Step 1	`Router(config)# controller t1/e1 1/0`	Enters controller configuration mode by controller number.
Step 2	`Router(config-ctrl)# mode cas`	Configures channel-associated signaling.
Step 3	`Router(config-ctrl-cas)# framing esf`	Configures framing.
Step 4	`Router(config-ctrl-cas)# linecode b8zs`	Configures line encoding format.
Step 5	`Router(config-ctrl-cas)# framing {sf | esf}`	If necessary, changes the DS1 link framing format. The default is SuperFrame (sf).
Step 6	`Router(config-ctrl-cas)# ds0-group 1 timeslots 1-24 type e&m-immediate-start`	Configures the DS0 group.
Step 7	Repeat Steps 3 through 6 for each additional DS0 group.	Configures additional DS0 groups on the T1/E1 interface. You can configure as many as 24 DS0 groups on a T1/E1.
Step 8	`Router(config-ctrl-cas)# exit`	Exits controller configuration mode.
Step 9	`Router(config-ctrl)# no shutdown`	Activates the T1/E1 controller.
Step 10	`Router(config-ctrl)# exit`	Exits controller configuration mode.
Step 11	`Router(config)# exit`	Exits configuration mode.
Step 12	`Router# show controller t1/e1 1/0`	Verifies the controller configuration.

For additional information about configuring specific features, see the following references:

- For PPP, HDLC, or Frame Relay, consult the online master index for the Cisco IOS release you are using.

  See the “Cisco IOS Software Documentation” section on page 4.
- For loopback diagnostics, or for configuring controller channel groups, channel-associated signaling (CAS) voice groups, or time-division multiplexing (TDM) cross-connects, refer to the *Cisco IAD2430 Series Integrated Access Devices Software Configuration Guide*.

  See “Hardware Installation Guide” section on page 3.

Verifying and Saving Your Configuration

To verify the configuration and save it in NVRAM so that the configuration remains in effect if the Cisco IAD is restarted, enter the following commands:

Command	Description
`Router# show running-config`	Displays the current operating configuration, including any changes you have made.
`Router# show startup-config`	Displays the configuration currently stored in NVRAM.
`Router# show controller t1/e1 1/0`	Displays the configuration of the T1/E1 network interface controller.
`Router# copy running-config startup-config`	Writes the current running configuration to NVRAM, where it overwrites the startup configuration and becomes the new startup configuration. **Note** If you reboot the Cisco IAD or turn off the power before you complete this step, you lose the configuration.

New Syntax for Cisco IAD2430 Series

There have been minor changes to the syntax for Cisco IAD2430 series IADs. These relate to the network-clock-participate command. Platforms such as the Cisco 3700 series use the following:

network-clock-participate wic *slot#* **port** *port#*

For example:

```
network-clock-participate wic 1 port 0
```

The new syntax required by Cisco IAD2430 series IADs is as follows:

network-clock-participate *controller_type slot#/port#*

For example:

```
network-clock-participate t1 1/0
network-clock-participate t1 1/1
network-clock-participate e1 1/0
network-clock-participate e1 1/1
```

Note In addition, the Cisco IAD2430 series default mode setting for the above command is network-clock-participate. For Cisco 3700 series platforms, the no network-clock-participate command is the default.

Where to Go Next

For additional specialized configuration procedures, refer to the appropriate Cisco IOS software configuration documentation.

Tip See the “User Documentation” section on page 3 for help in locating these documents.

10 Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation DVD

Cisco documentation and additional literature are available in a Documentation DVD package, which may have shipped with your product. The Documentation DVD is updated regularly and may be more current than printed documentation. The Documentation DVD package is available as a single unit.

Registered Cisco.com users (Cisco direct customers) can order a Cisco Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/

Cisco Marketplace:

http://www.cisco.com/go/marketplace/

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

11 Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

12 Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com
- Nonemergencies—psirt@cisco.com

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

13 Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the Tools & Resources link under Documentation & Tools. Choose Cisco Product Identification Tool from the Alphabetical Index drop-down list, or click the Cisco Product Identification Tool link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting show command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

14 Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

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- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

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- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

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  http://www.cisco.com/en/US/learning/index.html

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